

X-ray Polarimetry with GEMS

The polarization properties of cosmic X-ray sources are still largely unexplored. The Gravity and Extreme Magnetism SMEX (GEMS) will carry out the first sensitive X-ray polarization survey of a wide range of sources including; accreting compact objects (black holes and neutron stars), AGN, supernova remnants, magnetars and rotation-powered pulsars. GEMS employs grazing-incidence foil mirrors and novel time-projection chamber (TPC) polarimeters leveraging the photoelectric effect to achieve high polarization sensitivity in the 2 - 10 keV band. I will provide an update of the project status, illustrate the expected performance with several science examples, and provide a brief overview of the data analysis challenges.